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ABSTRACT

This guide contains classroom-tested problems designed to introduce and reinforce mathematical concepts in a quick, "fun" way. Activities emphasize the logic and reasoning skills needed to build a strong foundation in mathematics. The problems are thinking activities and require only elementary level mathematics skills. Activities are suitable for grades 2-5 and require addition and subtraction skills. (ASK)

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A1

QUICK THINKS MATH

ROBERT FEMIANO

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Book A1

Quick Thinks Math

Robert Femiano

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Introduction

Objective

Quick Thinks Math classroom-tested problems were designed to introduce and reinforce mathematical concepts in a quick, fun way. The activities emphasize logic and reasoning skills needed to build a strong foundation in mathematics.

Skill Level

Quick Thinks Math problems are thinking activities and need only elementary math skills to solve. Problems in both Book A1 and Book B1 are grouped according to degree of difficulty—from easier problems in the beginning to more difficult problems towards the end. Book A1 is suitable for grades 2–5 and requires addition and subtraction skills. Introductory multiplication and division is practiced in the more difficult section. However, less experienced students can solve the multiplication and division problems with repeated addition and subtraction. Beginning fractions can be explored by finding equal numbers that add to the desired total (e.g., to find 1/3 of 12, add three equal numbers to total 12 [4 + 4 + 4]). Book B1 is suitable for grades 5–8 and requires a working knowledge of multiplication and division. A few of the more challenging problems touch on the use of algebra. The focus of Book B1, however, is on developing a deeper understanding of fractions, decimals, and percents.

Teaching Suggestions

Ask students to explain their answers both orally and in writing. Most of these problems can be solved in more than one way. Sharing answers and methods of problem solving with fellow classmates will illustrate that there's not always just one way to do math. Plenty of space has been provided between the problems to encourage students to write everything down, step by step. This process will strengthen thinking and math-communication skills. You may also find it motivating to use your own students' names in the problems.

Emphasize the importance of going through all the steps. The process of problem solving is often more important than the answer. When students are having difficulty, focus their attention on what they already know about the problem and what they need to find out. Given the time to reflect on the problem-solving process, students will learn to self-correct and to reach a more thorough understanding of the math concepts involved. To help with this effort, a page has been included called "Tips for Problem Solving." You may want to put the tips on a chart and post it in the classroom for easy reference.

Use manipulatives and drawing to aid the visual/concrete learners, regardless of age. Plastic coins and base 10 blocks can be used with Book A1; concrete representations of fractions and decimals can be used with Book B1.

Lastly, enjoy the problems yourself. Relax and become a learner again. Sharing your triumphs and your struggles will make the experience rewarding for both you and your students.

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Tips for Problem Solving

1. Do you know what the problem is asking you to find? (What do you need to know to give the answer?) You may need to read the problem 3 or 4 times—Don't panic!

2. Do you expect the answer to be larger or smaller than the largest number in the problem? About how much do you think the answer should be? (This is called estimating the answer.)

3. Put small numbers in place of large numbers, and then read the problem again.

4. Draw or act out the problem.

5. Guess and check.

6. Make a chart or table.

7. Work the problem out backwards.

8. Read the problem again. Plug in information that you've already solved.

9. Try using blocks or other things to help you "see" the problem.

10. Does your answer make sense? Did you put your answer back in the problem and read it again?

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1. Margo is one year younger than Dominic. How old are they together if Margo is 15?

2. The twins' ages total 22. How old will each be next year?

3. What number comes next in the series?

   71, 67, 63, _____

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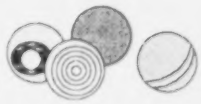
4. Kricket is taller than Nick but shorter than Allison. If Allison is shorter than Alex, who is the shortest?

5. Hannah and Justin have the same number of marbles. If Justin got 3 more, they would have 21 altogether. How many does Hannah have?



6. Ramona was 10 years old 10 years ago. How long will it be until she is 50?

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7. How much older is a 42 year old than a 7 year old?

8. Danny had 15¢. Jenny had 10¢ more than that. How many 10¢ toys can they buy if they put their money together?

9. How much is 2 quarters, 2 dimes, 2 nickels, and 2 pennies?

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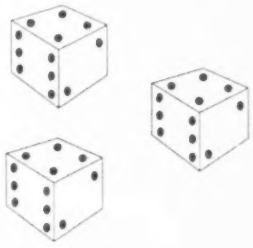
10. Tyler had 2 dozen cookies. He ate too many and now has only 8 left. How many did he eat?

11. The triplets' ages total 42. What did their ages total last year?

12. What is the highest roll you can get on 3 regular dice (6 sides) if no number is the same and all numbers are even?



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13. There are two choices for school lunch, pizza or salad. From a class of 24, nine chose pizza. How many more chose salad than pizza?

14. Fill in the missing number.

45, _____ , 51, 54

15. Somatra and Valentina both have the same number of pogs. If Somatra loses 3 to Valentina, by how many will Valentina be ahead?

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16. If Allison is five years younger than Jack and their ages total twenty-one, how old is Allison?

17. What day is missing in the series?

Sunday, _____ , Thursday, Saturday

18. Fill in the missing number.

_____ , 3, 5, 8, 12

11

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19. If your teacher was 30 years old eleven years ago, how old was he 14 years ago?

20. What number comes next in the series?

10, 20, 40, 70, _____

21. Johnny will be 25 years old in 10 years, so how long ago was he 10 years old?

22. Milk costs 35¢ a carton. What 4 coins would you use to buy 2 cartons of milk?

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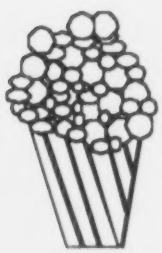
23. Fill in the missing number.

_____ , 2, 1, 3, 2, 4, 3, 5

24. A pie has 8 slices. How many slices are in three and a half pies?

25. Manuel has 3 nickels. He wants to buy a 35¢ bag of popcorn. What 3 coins would give him enough?



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26. Michelle will be 2 years old in a year, so how old was she a year ago?

27. When counting by 2s, what number comes 3 counts before 100?

28. Forty-two pennies can be made into how many piles of ten?

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29. Dominic is twice Margo's age. If Dominic is 14, how old are they together?

30. I am a number on a die. If you roll 4 of me, you get 20. Who am I?

31. Jason is 8 years older than Jacob. If Jason will be 64 next year, how long will it be until Jacob is also 64?

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32. Dad is 30 years older than his son. Three years ago, the son was 9. How old is Dad today?

33. What is the smallest number on the number line that is 1 space away from 7900?

34. Mom finds a quarter and 2 dimes in her purse. She says this is the change from a one-dollar bill. How much did she spend?

35. Fill in the missing number.

20, _____ , 14, 11

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36. What is one more than forty-five doubled?

37. What is 40 less than 13 tens and 3 ones?

38. A mural has 35 tiles in 4 colors. If there are 8 grays, 6 blues, and 12 reds, how many black tiles are there?

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39. I am less than 3 dimes but more than a quarter. What 2 coins could I be?

40. If mints come 10 to a pack, how many packs will you need to give 23 people three mints each?

41. Tony gave 20¢ to Michael, and now Tony has 1 quarter, 1 nickel, and 1 penny. How much did he begin with?

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42. What 2 coins make a half of a half of two dollars?

43. Nick has two coins in his left hand and 2 quarters in his right hand. He has just enough to buy 3 pieces of gum that cost 20¢ each. What 2 coins are in his left hand?

44. One year ago Adrienne turned 20 years old. How long will it be until she is a century old?

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45. Five dice are rolled. Two of them are sixes and the total is twenty-four. What could the other dice be if they were all the same?

46. Taylor had 10 coins. Half were nickels, and the other half were dimes. How much does she have?

47. Fill in the missing number.

90, _____ , 30, 0

48. What do the numbers 0 to 10 add up to?

49. What 2 numbers less than 20 have no value in the ones place? Add the numbers together. What do you get?

50. Add 19 to me and I become double 19. Who am I?

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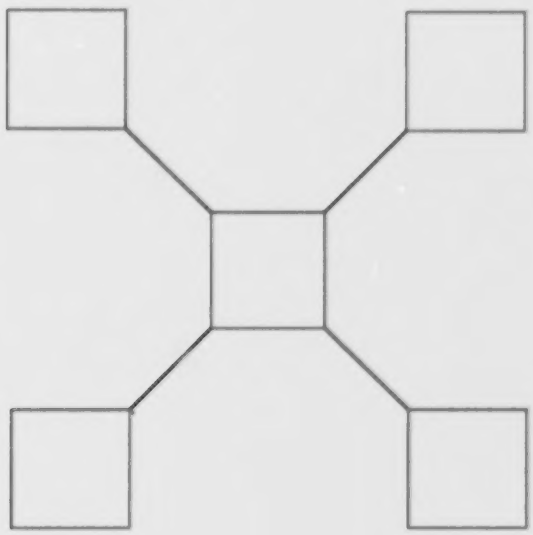
51. In this puzzle, you must use the numbers 1, 2, 3, 4, and 5 so that along each diagonal line the total is 10. What number goes in the center?



52. The Seahawks lost by 12 points to the Cowboys. How many points did the Cowboys score if the total of the two scores was 24?

53. Bianca got 58¢ back from the two-dollar bill she gave the clerk. How much did she spend?

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54. Fill in the missing letter.

_____ , F, J, N, R

55. I am an even number between 30 and 39 and divisible by 3. Who am I?

56. Fill in the missing number.

_____ , 60, 64, 70, 78

57. Kira had $1.00 in pennies. She gave 12¢ to Teddy and spent twice that on herself. How much is left?

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58. How many seconds does it take to boil a 3-minute egg?

59. How long will it take a 7 year old to triple his/her age?

60. What is 10 less than 1001?

61. What is half of seven plus half of seventeen?

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62. Joey has 75¢. Nicole gives him 4 dimes. Does Joey now have enough to buy them each a toy that costs 60¢ apiece?

63. How much is 1 ten plus 2 tens plus 3 tens plus 4 tens plus 5 tens plus 6 tens in ones?

64. Alvaro has 2 quarters, 2 dimes, and 1 nickel. Brian has double that amount of money but only has 3 coins. What are they?

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65. What number is 30 less than 31 tens?

66. What is 55 1/2 doubled?

67. Alexander lost half of his money and now has 85¢. Before he lost his money, how much more did he need if he wanted $5.00?

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68. Kristi had some money. She got 15¢ more from Julia, and now they have the same amount. Together they have $2.70. What 5 coins did Kristi begin with?

69. Anthony paid $21.10 for a shirt. If he paid using only dimes, how many would he need?

70. How many dimes equals 1,000 pennies?

27

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71. How many dollars equals 10,000 pennies?

72. Fill in the blanks so the numbers are evenly spaced.

101, _____ , _____ , 1001

73. Fill in the missing number.

10, _____ , 22

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74. Take away half of me and you get a half. Who am I?

75. How many even numbers between 1 and 100 have a 5 in them?

76. Will the sum of the first 10 odd numbers be an even number?

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77. Rob spills out 34 regular dice (6-sided). Half are 2s and half are 1s. What is the total?

78. Which is the most?

a. the minutes in a school day (9:00 A.M. to 3:00 P.M.)

b. a hundred threes

c. half of 550

79. Duffy has only dimes. He has 45¢ more than Chan. Chan is 35¢ shy of $1.00. How many dimes does Duffy have?

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80. Jacquie had some pennies. She gave half to Jennifer. Jennifer gave half of what she got from Jacquie to Lindsey. If Lindsey has 9 pennies, how many did Jacquie start with?

81. Thomas has 2 shirts, 2 ties, and 2 pairs of pants. How many different ways can he dress?

82. If five pencils cost $1.00, how much would 7 cost?

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83. What is half of 1111?

84. From 20 dollars, how much did Ezra spend if he got back 7 quarters and 7 dimes?

85. From a 20-dollar bill, Brittany gets back 35 dimes and 2 pennies. If she bought two items at identical prices, how much was each?

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86. What number is the same as a hundred hundreds?

87. Fill in the missing number.

807, 704, 602, 501, _____

88. How many hundreds are in 101,101?

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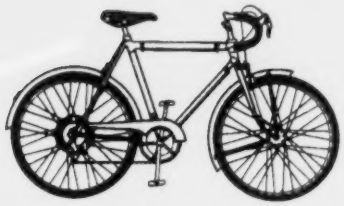
89. Four kids decide to buy and equally share a bicycle, one week at a time. By the end of a year, how many weeks has each kid had the bike?



90. Five classmates were in a spelling bee. Mallory did not come in first, while Ezra was neither first nor last. Mallory was one place ahead of Ashley. Jarrod was not second, but he was two places ahead of Duffy. Who finished in third place?

91. How many seconds are in one-tenth of a minute?

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92. Fill in the missing numbers.

1, _____ , _____ , 25

93. Fill in the missing number.

_____ , 1019, 2010, 3001

94. Catlin has some basketball cards. She got 496 more for her birthday. Then she found 2705. Now she has the same amount as Brittany, who used to have 5050 cards before she lost 1327. How many did Catlin start with?

35

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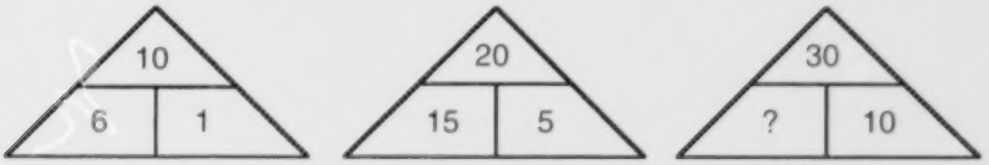
95. What number completes this puzzle?



96. Licorice sells at a quarter a box, with 7 pieces in a box. How many pieces can you buy with 16 nickels, and how much change will you have left over?

97. If Lencho was 30 years old in 1996, in what year would he turn 50 years old?

98. Mica had $301.10 in dimes. She lost some from the hole in her pocket. Now she has 1347 dimes. How much money did she lose?

99. What is half of half of half of 30,000?

100. Margo is three times as old as Dominic. Their ages make 36 when added together. How old is Dominic?

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101. Mom told Sarah to give half of her cookies to Alissa. If Sarah had eaten one from the dozen, how many would she give to Alissa?

102. I have 12 tens in me and my digits add to 12. Who am I?

103. Add 3 to me and I become one-third of 300. Who am I?

104. My four digits are all even, and they add to 24. I have a two in my ones place. My tens digit is smaller than the hundreds. Who am I?

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105. Take half of me and add it to myself and you get 105. Who am I?

106. Pedro had $2.00 in change. He lost 5 coins and was left with 20 nickels. What coins did he lose?

107. Latisha has the same number of quarters and dimes in her purse. She has $3.15, so what coins does she have?

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108. Mr. Leatherman pulls out 4 coins from his pocket and says that with 25¢ more, he'd have a nickel more than 6 quarters. What coins does he have?

109. Teddy had some money. He got 20¢ from Channelle, and now they have the same amount. Together they have $2.70. What 5 coins did Teddy have before he got the money from Channelle?

110. You have the same number of quarters, dimes, nickels, and pennies. How many coins do you have if your total is $6.15?

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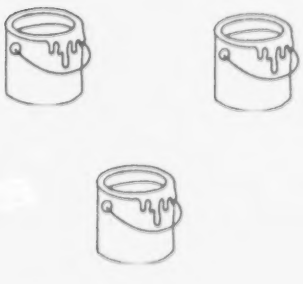
111. What 2 consecutive numbers add up to 91?

112. What 3 consecutive numbers add up to 6000?

113. Using only 1s and 0s, what are the first 4 counting numbers that have 3 or more zeros, and what is their sum?

114. A painter used 7 gallons of white paint, half that much of blue, and only a half gallon of yellow. If a gallon of paint costs $10.00, how much did the painter spend?



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115. If Ms. Garcia is exactly 41 years older than her child and together their ages total 42, how old is Ms. Garcia?

116. Use some or all of the numbers 16, 17, 23, and/or 24 to make the sum 100. You may use a number more than once.

117. How many quarters are in $25.00?

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118. At the hoop shoot, Julie scored 20 less than Jane, who scored 30 less than Gia. If all three together scored 100, how many did Julie score?

119. Dom is 14 years old. Margo is 9. In how many years will their ages total 99?

120. Kevin is twice as old as Greg. Next year Kevin will be 31 years older than Greg. How old is Kevin?

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Answers

1. 31. If Margo is 15, Dominic is 16 (15 + 16 = 31).

2. 12. They are both 11 right now (11 + 11 = 22), so next year they will be 12.

3. 59. The numbers given are decreasing by 4.

4. Nick. Drawing helps with this problem. The following are listed from tallest to shortest: Alex, Allison, Kricket, Nick.

5. 9. If Hannah has 9, Justin has 12 (9 + 12 = 21). Subtract 3 from 21 to find they originally had 18. Each then would have 9.

6. 30 years. Ramona is 20 now (50 - 20 = 30).

7. 35 years. Subtract 7 from 42 (42 - 7 = 35).

8. 4. 15¢ + (15¢ + 10¢) = 40¢. Four dimes equals 40¢, so they can buy four 10¢ toys.

9. 82¢. 50¢ + 20¢ + 10¢ + 2¢ = 82¢

10. 16. Two dozen = 24 (12 + 12). Subtract the 8 cookies left from 24 to get 16. (You can also count backwards from 24 to 8, or count up from 8 to 24.)

11. 39. Since they are triplets, the total increases by 3 each year. Subtract 3 from 42 to get 39.

12. 12. 6 + 4 + 2 = 12 (None are repeated; all are even.)

13. 6. Nine chose pizza, 15 chose salad (24 - 9 = 15). There are 6 more salads than pizzas (15 - 9 = 6).

14. 48. The numbers increase by 3.

15. 6. Try using any number larger than 2. If, for example, they both had 5, Somatra would then have 2 (5 - 3 = 2) and Valentina would have 8 (5 + 3 = 8). The difference between 8 and 2 is 6.

16. 8. A table might be helpful.

Allison	Jack	Total
5	10	15
6	11	17
8	13	21

17. Tuesday. This is an every-other-day pattern.

18. 2. Working backwards, the difference between adjacent numbers is first 4, then 3, then 2, so subtract 1 to get the first number.

19. 27. Subtract 3 more from the 30 since 14 is 3 more than 11. (Or, you can figure today's age at 41 [30 + 11], and then subtract 14.)

20. 110. The numbers given are increasing by 10, then 20, then 30, and finally by 40 (70 + 40 = 110).

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21. 5 years. Johnny is 15 years old now (25 - 10). So, 5 years ago he would have been 10.

22. 2 quarters and 2 dimes. One carton of milk costs 1 quarter and 1 dime.

23. 0. The pattern is to add 2 to get the next number, then subtract 1 to get the number after that: add 2, subtract 1. (Or, if you skip every other number, the pattern becomes simply to add 1.)

24. 28 slices. If a pie has 8 slices, three pies have 24 slices (8 + 8 + 8). Half a pie has 4 slices. Add 4 to 24 to get a total of 28 slices.

25. Dime, nickel, nickel. He has 15¢ and needs 20¢ more.

26. 0. Michelle is 1 year old now, so a year ago she was just born.

27. 94. Count backwards by 2s: 98, 96, 94.

28. 4. You can make four complete piles of ten with 40 coins. You will have 2 left over, not making a fifth pile of ten.

29. 21. If Dominic is 14 and that is twice Margo's age, she must be 7 (14 + 7 = 21).

30. 5. You need 4 fives to make 20 (5 + 5 + 5 + 5 = 20).

31. 9. If Jason needs one year to turn 64 and he is 8 years older than Jacob, then Jacob will need the 8 years plus the 1 year.

32. 42. The son is 12 now (9 + 3), and Dad is still 30 years older (12 + 30 = 42).

33. 7899.

34. 55¢. The coins total 45¢. Subtract 45¢ from $1. (Or, count up from 45¢ to $1.)

35. 17. The numbers decrease by 3.

36. 91. Forty-five doubled is 90. One more makes 91.

37. 93. Thirteen tens (130) and 3 ones (3) make 133. Subtract 4 tens (40) from 133 to get 93.

38. 9. Start with 35 and take away 8, then 6, and then 12. Nine black tiles are left.

39. The penny and quarter are the only two coins to make this true.

40. 7 packs. Add 23 (# of people) three times (23 + 23 + 23) to get 69. You'll need seven packs of 10 (add 10 seven times, or multiply 10 × 7) to give 23 people 3 mints each.

41. 51¢. A quarter, nickel, and penny make 31¢. Twenty cents more makes 51¢.

42. 2 quarters. Half of two dollars is one dollar; half of that is 50¢.

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43. Two nickels. The 3 pieces of gum cost 60¢ (20 + 20 + 20). He has 50¢ with the 2 quarters. He needs 10¢ in two coins.

44. 79 years. A century is 100 years, so subtract 21 (Adrienne's age this year) from 100.

45. 4s. Two 6s make 12. If the total is 24, the other three dice must add to 12 also (4 + 4 + 4 = 12).

46. 75¢. Five nickels = 25¢, and 5 dimes = 50¢ for a total of 75¢.

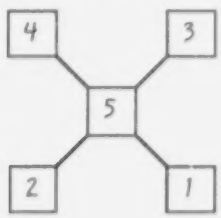
47. 60. The numbers decrease by 30.

48. 55. An easy way to do this is to pair up the 0 + 10, 1 + 9, 2 + 8, 3 + 7, and 4 + 6 for five tens. This leaves only the 5 to be added on.

49. 10. The only two numbers less than 20 with no value in the ones place are 0 and 10.

50. 19. Nineteen doubled is 38.

51. 5. Balance the middle with a 4 and 1 on one line and a 3 and 2 on the other.



52. 18. The Seahawks scored 6. A table might be helpful.

53. $1.42. Subtract 58¢ from $2.

54. B. The letters given are increasing alphabetically by 4 letters.

55. 36. Thirty-three is not an even number.

56. 58. The difference between 60 and 64 is 4. The difference in the next set of numbers is 6, and then it increases to 8. Working backwards, we need to subtract 2 from 60 to keep the pattern.

57. 64¢. She spent 24¢ (twice 12) and gave away 12¢ for a total of 36¢. Subtract 36¢ from $1 to get 64¢.

58. 180 seconds. There are 60 seconds in a minute, so in 3 minutes there are 60 + 60 + 60 seconds.

59. 14 years. It takes 14 years to go from 7 to 21 years old (21 - 7 = 14).

60. 991. Subtract 10 from 1001.

61. 12. Half of 7 is 3 1/2 and half of 17 is 8 1/2 (3 1/2 + 8 1/2 = 12).

62. No. Joey needs $1.20 (60¢ + 60¢) but has only $1.15.

63. 210 ones. This is the same as 21 tens, which is what you get when you add 1 + 2 + 3 + 4 + 5 + 6 tens.

64. 3 half dollars. Alvaro has 75¢, so Brian has $1.50.

65. 280. Thirty-one tens is 310. Subtract 30 from 310.

66. 111. Add 55 1/2 to 55 1/2. This is the same as 55 + 55 + 1/2 + 1/2.

67. $3.30. Eighty-five cents doubled is $1.70. Subtract $1.70 from $5.

68. Half dollar, 2 quarters, 2 dimes. If together they have $2.70, then each has $1.35. Kristi got 15¢ from Julia, so she had $1.20 at the start ($1.35 – $.15 = $1.20).

69. 211. There are ten dimes in a dollar, so there are 210 dimes in 21 dollars. There is still a dime missing, so Anthony needs 211 dimes.

70. 100. One hundred tens is the same as one thousand.

71. 100. Ten thousand pennies divided into groups of 100 (each group makes 1 dollar) give 100 dollars.

72. 401, 701. The numbers increase by 300.

73. 16. The numbers increase by 6.

74. 1. One take away a half leaves a half.

75. 5. 50, 52, 54, 56, and 58 are the only even numbers between 1 and 100 that have a 5 in them.

76. Yes. When you add an even amount of odd numbers, you'll get an even sum. Since 10 is even, the answer will also be even.

77. 51. Half of 34 is 17. Seventeen dice have 2s (34 total), and 17 dice have 1s (17 total). Together, the dice total 51 (34 + 17).

78. (a). The minutes in a school day. Six hours equals 360 minutes.

79. 11 dimes. Chan has 65¢, so Duffy has $1.10 (65 + 45). This is the same as 11 dimes.

80 36. Work this problem out backwards. Nine doubled is 18, and eighteen doubled is 36.

81. 8. This is a good problem to draw. One tie, two shirts, and two pants makes 4 combinations. If one tie makes 4 combinations, then 2 ties would make 8 combinations, or 8 ways to dress. (Or, multiply 2 × 2 × 2.)

82. $1.40. Each pencil costs 20¢ (20 + 20 + 20 + 20 + 20 = 100), so 7 will cost 40¢ more than 1 dollar.

83. 555 1/2. Half of 1000 (500) plus half of 100 (50) plus half of 10 (5) plus half of 1 (1/2) is 555 1/2. (Or, divide 1111 by 2.)

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84. $17.55. Seven quarters = $1.75 and seven dimes = 70¢. Ezra got back $2.45, so he spent $17.55.

85. $8.24. Brittany has $3.52 in change, which means she spent $16.48 ($20 - $3.52). Add two equal numbers to total $16.48 ($8.24 + $8.24), or divide $16.48 by 2.

86. 10,000. Ten hundreds is one thousand, so one hundred hundreds would be ten groups of one thousand.

87. 401. The numbers given are decreasing by 103, then 102, then 101. Subtract 100 from 501 to get 401.

88. 1011. Cover everything to the right of the hundreds place. What's left is the answer.

89. 13 weeks. A year has 52 weeks. Divide 52 into 4 equal groups.

90. Duffy. The complete answer is Jarrod, Ezra, Duffy, Mallory, Ashley.

91. 6. One-tenth of a minute is 6 seconds. Divide 60 into 10 equal groups.

92. 9, 17. The numbers increase by 8.

93. 28. The numbers given are increasing by 991.

94. 522. Catlin has 3201 cards (496 + 2705) plus her original cards. Brittany has 3723 (5050 - 1327). Subtract Brittany's current total from the 3201 cards we know Catlin has (3723 - 3201 = 522). The difference between the two is what Catlin began with.

95. 25. Subtract the 2 bottom numbers (smaller from larger) and then double that answer to get the top number.

96. 21, 5¢ left over. Sixteen nickels is 80¢. You can get 21 pieces of licorice with 3 quarters (7 + 7 + 7).

97. 2016. It will take him 20 years to turn 50, so add 1996 + 20.

98. $166.40. She started with 3011 dimes and ended with 1347. Therefore, she lost 1664 dimes (3011 - 1347 = 1664).

99. 3750. Half of 30,000 is 15,000. Half of that is 7500. Half of 7500 is 3750.

100. 9. This is a good problem to use a table or guess and check.

Dominic	Margo	Total
5	15	20
7	21	28
9	27	36

101. 5 1/2. One less than a dozen is 11. Add two equal numbers to total 11 (5 1/2 + 5 1/2), or divide 11 by 2.

102. 129. The only numbers with 12 tens are 120–129. Only one of

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these has the digits that total 12 (1 + 2 + 9).

103. 97. One-third of 300 is 100. Add three equal numbers to total 300 (100 + 100 + 100), or multiply 1/3 by 300. Subtract 3 from 100 to get 97.

104. 8862. Subtract the 2 from 24, and this is what the other digits must total (22). The only three even digits that add to 22 are 6 + 8 + 8, and the six must go in the tens place.

105. 70. Try guess and check or make a table. (70 + 35 = 105)

106. Half dollar, quarter, two dimes, nickel. Since he had 20 nickels left ($1), the remaining 5 coins must equal $1 ($2 - $1).

107. 9 quarters and 9 dimes. Try guess and check.

108. Two half dollars, 1 quarter, and 1 nickel or 1 silver dollar and 3 dimes. He has $1.30 in 4 coins (six quarters [$1.50] + 5¢ = $1.55). Subtract 25¢ from $1.55 to get $1.30.

109. Two half dollars and three nickels. If they have $2.70 together, each must have $1.35. Subtract 20¢, and what's left is what Teddy started with ($1.15).

110. 60 coins. You have 15 of each type. Try guess and check.

111. 45 and 46. Try guess and check.

112. 1999, 2000, 2001. Try guess and check.

113. 1000; 10,000; 10,001; 10,010. The sum is 31,011.

114. $110. The painter used 11 gallons (7 + 3 1/2 + 1/2). Eleven tens is 110.

115. 41 1/2. The child is 1/2 year old.

116. 17 + 17 + 17 + 17 + 16 + 16 = 100. Try guess and check.

117. 100. You could count by 4s since 4 quarters = $1, and on the 25th count you'd be at 100. (Or, multiply 4 × 25.)

118. 10. Jane scored 30 and Gia scored 60. Try guess and check.

119. 38 years. Dom will be 52 and Margo will be 47. Today their ages total 23. Subtract 23 from 99 to get 76 years. Divide this in half to find the answer. Each year their total increases by 2 years, not 1.

120. Kevin is 62. Greg is 31. Kevin will always be 31 years older.

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